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ABSTRACT

This comprehensive and verified employer competency list was developed from a modified DACUM (Developing a Curriculum) process involving business, industry, labor, and community agency representatives from Ohio. This competency list contains 11 units (with or without subunits), competencies, and competency builders that identify the occupational, academic, and employability skills needed to enter the repair business as an auto mechanic. Within the outline are three levels of items: core (required, the basis for state vocational competency tests); advancing (needed to advance in an occupation); and futuring (needed to enter and remain in a given occupation 3 to 4 years from now). The units cover the following: (1) safety and housekeeping; (2) engine repair; (3) automatic transmission/transaxle; (4) manual drive train and axles; (5) suspension and steering; (6) brakes; (7) electrical systems; (8) heating and air conditioning; (9) engine performance; (10) nonmechanical body trim and upholstery; and (11) employability skills. (KC)

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OCAP

OHIO'S COMPETENCY ANALYSIS PROFILE

AUTO MECHANICS

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Ohio's Future at Work

Division of Vocational and Career Education
Ohio Department of Education

Vocational Instructional Materials Laboratory
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THE OHIO STATE UNIVERSITY

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What is OCAP?

"A comprehensive and verified employer competency list will be developed and kept current for each program." This is the second objective of Imperative 3 of the *Action Plan for Accelerating the Modernization of Vocational Education: Ohio's Future at Work*. Ohio's Competency Analysis Profile (OCAP) lists are the Division of Vocational and Career Education's response to that objective. OCAP lists evolve from a modified DACUM process involving business, industry, labor, and community agency representatives from throughout Ohio. The OCAP process is directed by the Vocational Instructional Materials Laboratory at The Ohio State University's Center on Education and Training for Employment.

How is OCAP used?

Each OCAP contains units (with and without subunits), competencies, and competency builders that identify the occupational, academic, and employability skills needed to enter a given occupation or occupational area. Within that outline there are three levels of items: core, advancing, and futuring. Core items are essential to entry-level employment. These items are required to be taught and will be the basis for questions on the state vocational competency tests (scheduled to begin in FY93). Advancing items (marked with one asterisk) are needed to advance in a given occupation. Futuring items (marked with two asterisks) are needed to enter and remain in a given occupation three to four years from now.

Districts may add as many units, subunits, competencies, and competency builders as desired to reflect local employment needs, trends, and specialties. Local advisory committees should be actively involved in the identification and verification of additional items. Using OCAP lists, instructors will be able to formulate their courses of study and monitor competency gains via the new competency testing program.

The **Employability Skills** portion of this list was verified by the following employer panel:

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OHIO COMPETENCY ANALYSIS PROFILE

AUTO MECHANICS

UNIT 1: Safety and Housekeeping

COMPETENCY 1.0.1: Use and care for personal safety equipment

COMPETENCY BUILDERS:

1.0.1.1 Use eye and ear protection according to Occupational Safety and Health Administration (OSHA) standards
1.0.1.2 Wear proper foot protection
1.0.1.3 Wear clothing according to OSHA standards
1.0.1.4 Remove jewelry

COMPETENCY 1.0.2: React to fire

COMPETENCY BUILDERS:

1.0.2.1 Identify types of fires
1.0.2.2 Locate fire exits
1.0.2.3 Locate fire blankets
1.0.2.4 Locate and demonstrate use of fire extinguishers

COMPETENCY 1.0.3: React to emergency and injury situations

COMPETENCY BUILDERS:

1.0.3.1 Explain and interpret safety plan of shop
1.0.3.2 Demonstrate all steps of safety plan
1.0.3.3 Identify nature of injury

COMPETENCY 1.0.4: Maintain tools and equipment

COMPETENCY BUILDERS:

1.0.4.1 Check grounding and wire condition of all electrical tools
1.0.4.2 Demonstrate proper care and maintenance procedures for all tools and equipment
1.0.4.3 Check mounting shields according to OSHA requirements
1.0.4.4 Initiate inspection by Ohio Department of Industrial Relations, Division of Safety and Hygiene

* Advancing
** Futuring

COMPETENCY 1.0.5: Avoid hazardous situations

COMPETENCY BUILDERS:

1.0.5.1 Maintain clean and safe work stations
1.0.5.2 Follow directions on hazardous materials and tags or labels
1.0.5.3 Handle and dispose of hazardous materials
1.0.5.4 Interpret personal safety rights according to OSHA's "Right to Know" plan

UNIT 2: Engine Repair

COMPETENCY 2.0.1: Remove and reinstall engine

COMPETENCY BUILDERS:

2.0.1.1 Refer to shop manual for correct procedure
2.0.1.2 Interpret complaint
2.0.1.3 Road test vehicle
2.0.1.4 Inspect engine assembly for fuel, oil, coolant, and other leaks
2.0.1.5 Determine presence and operational status of emission control apparatus
2.0.1.6 Listen to engine noises
2.0.1.7 Diagnose excessive oil consumption, unusual engine exhaust color, odor, and sound
2.0.1.8 Perform engine vacuum tests
2.0.1.9 Perform cylinder power balance tests
2.0.1.10 Perform cylinder leakage tests
2.0.1.11 Remove front-wheel-drive (FWD) engine and prepare for teardown
2.0.1.12 Reinstall FWD engine
2.0.1.13 Remove rear-wheel-drive (RWD) engine and prepare for teardown
2.0.1.14 Reinstall RWD engine

COMPETENCY 2.0.2: Troubleshoot and repair cylinder head and valve train

COMPETENCY BUILDERS:

2.0.2.1 Refer to shop manual for correct procedure
2.0.2.2 Remove cylinder head
2.0.2.3 Clean and visually inspect cylinder heads for cracks
2.0.2.4 Clean and inspect gasket surface areas for warpage and leakage
2.0.2.5 Check passage condition
2.0.2.6 Determine need to send cylinder head out for inspection and repair
2.0.2.7 Install cylinder heads and gaskets
2.0.2.8 Inspect and test valve springs for squareness, pressure, and free height comparison and place as needed
2.0.2.9 Inspect valve spring retainers, locks, and valve-lock grooves
2.0.2.10 Replace valve stem seals
2.0.2.11 Inspect valve guides for wear, height, and stem-to-guide clearance and recondition or replace as needed
2.0.2.12 Inspect and resurface or replace valves
2.0.2.13 Inspect and resurface or replace valve seats
2.0.2.14 Check valve face-to-seat contact and seat concentricity (run-out) and service valves and seats as needed
2.0.2.15 Check valve spring assembled height
2.0.2.16 Check valve stem height
2.0.2.17 Repair valve and spring assemblies as needed
2.0.2.18 Inspect pushrods, rocker arms, rocker arm pivots, and shafts for wear, bending, cracks, looseness, and blocked oil passages and repair or replace as needed
2.0.2.19 Inspect, test, and replace hydraulic or mechanical lifters
2.0.2.20 Adjust valves
2.0.2.21 Inspect and replace camshaft drives (e.g., check gear wear and backlash, sprocket and chain wear, overhead cam drive sprockets, drive belts, belt tension, tensioners)
2.0.2.22 Inspect and measure camshaft journals and lobes
2.0.2.23 Inspect and measure camshaft bearing surfaces for damage, out-of-round, and alignment and determine needed repairs
2.0.2.24 Measure camshaft timing

* Advancing
** Futuring

COMPETENCY 2.0.3: Troubleshoot and repair engine block

COMPETENCY BUILDERS:

2.0.3.1 Refer to shop manual for correct procedure
2.0.3.2 Inspect and replace pans, covers, gaskets, and seals
2.0.3.3 Service engine block to determine needed repairs
2.0.3.4 Inspect and repair damaged threads
2.0.3.5 Remove cylinder wall ridges
2.0.3.6 Inspect and measure cylinder walls
2.0.3.7 Hone and clean cylinder walls
2.0.3.8 Inspect and measure camshaft bearings
2.0.3.9 Inspect and service crankshaft for surface cracks and journal damage
2.0.3.10 Check oil passage condition
2.0.3.11 Measure journal wear
2.0.3.12 Inspect and measure main and connecting rod bearings
2.0.3.13 Identify piston and bearing wear patterns
2.0.3.14 Inspect rod alignment and bearing bore condition
2.0.3.15 Inspect, measure, and repair or replace pistons
2.0.3.16 Install new piston pins and bushings
2.0.3.17 Inspect and repair or replace crankshaft vibration damper (harmonic balancer)
2.0.3.18 Inspect and repair crankshaft flange and flywheel/flexplate for burrs
2.0.3.19 Inspect flywheel/flexplate, including ring gear, for cracks and wear, measure run-out, and determine needed repairs
2.0.3.20 Inspect, remove, and replace crankshaft pilot bearing/bushing
2.0.3.21 Reassemble engine parts using correct gaskets and sealants
2.0.3.22 Inspect, repair, reinstall, and time auxiliary (i.e., balance, intermediate, idler, counterbalance, silencer) shafts
2.0.3.23 Prime engine lubrication system

* Advancing
** Futuring

COMPETENCY 2.0.4: Troubleshoot and repair lubrication and cooling systems

COMPETENCY BUILDERS:

2.0.4.1 Refer to shop manual for correct procedure
2.0.4.2 Perform oil pressure tests and determine needed repairs
2.0.4.3 Inspect, measure, and repair or replace oil pumps, pressure relief devices, and pump drives
2.0.4.4 Perform cooling system tests (i.e., pressure, combustion leakage, and temperature) and determine needed repairs
2.0.4.5 Inspect, replace, and adjust drive belts and pulleys
2.0.4.6 Inspect and replace engine cooling and heater system hoses
2.0.4.7 Inspect, test, and replace thermostat, bypass, and housing
2.0.4.8 Inspect, drain, flush, refill, and bleed cooling system with recommended coolant
2.0.4.9 Inspect, test, and replace water pump
2.0.4.10 Inspect, test, and replace radiator, pressure cap, and coolant recovery system
2.0.4.11 Clean, inspect, test, and replace electrical and mechanical fans, fan clutch, fan shroud, and cooling system temperature sensors/switches
2.0.4.12 Inspect, test, and repair or replace auxiliary oil coolers
2.0.4.13 Inspect, test, and replace oil temperature/pressure switches and sensors
2.0.4.14 Perform oil change (Note: Special diesel/turbocharged engine procedures must be followed.)
2.0.4.15 Dispose of waste fluids according to Environmental Protection Agency (EPA)

* Advancing
** Futuring

UNIT 3: Automatic Transmission/Transaxle

COMPETENCY 3.0.1: Troubleshoot general transmission/transaxle

COMPETENCY BUILDERS:

3.0.1.1 Refer to shop manual for correct procedure
3.0.1.2 Determine vehicle history
3.0.1.3 Interpret complaint
3.0.1.4 Road test vehicle
3.0.1.5 Verify engine operation and determine needed repairs
3.0.1.6 Diagnose transmission noise and vibration problems and determine needed repairs
3.0.1.7 Diagnose fluid usage, level, and condition problems and determine needed repairs
3.0.1.8 Perform pressure tests and determine needed repairs
3.0.1.9 Perform stall tests and determine needed repairs
3.0.1.10 Perform lock-up converter system tests and determine needed repairs
3.0.1.11 Diagnose electrical/electronic, mechanical, and vacuum control system problems and determine needed repairs

COMPETENCY 3.0.2: Maintain and adjust transmission/transaxle

COMPETENCY BUILDERS:

3.0.2.1 Inspect and adjust or replace manual shift valve and throttle (TV) linkages/cables
3.0.2.2 Adjust bands
3.0.2.3 Service transmission
3.0.2.4 Perform visual inspection of transmission
3.0.2.5 Replace fluids and/or filters
3.0.2.6 Inspect, adjust, and replace electronic sensors, wires, and connectors and determine needed repairs

* Advancing
** Futuring

COMPETENCY 3.0.3: Troubleshoot and repair in-vehicle transmission/transaxle*

COMPETENCY BUILDERS:

3.0.3.1 Refer to shop manual for correct procedure*
3.0.3.2 Inspect, adjust, and replace vacuum modulator
3.0.3.3 Inspect and repair or replace lines and hoses*
3.0.3.4 Inspect and repair or replace governor cover, seals, sleeve, valve, weights, springs, retainers, and gear*
3.0.3.5 Inspect and replace external seals and gaskets*
3.0.3.6 Inspect and repair or replace extension housing*
3.0.3.7 Replace bushing and seal in extension housing*
3.0.3.8 Inspect, leak-test, flush, and replace cooler, lines, and fittings*
3.0.3.9 Measure cooler flow rate*
3.0.3.10 Inspect and replace speedometer drive gear, driven gear, and retainers*
3.0.3.11 Inspect, measure, and repair or replace valve body*
3.0.3.12 Inspect and repair or replace servo*
3.0.3.13 Inspect and repair or replace accumulator*
3.0.3.14 Inspect, test, adjust, and repair or replace transmission-related electrical/electronic components (e.g., computers, solenoids, sensors, relays, switches)*
3.0.3.15 Inspect, replace, and align power train mounts*

COMPETENCY 3.0.4: Remove and repair off-vehicle transmission and transaxle*

COMPETENCY BUILDERS:

3.0.4.1 Refer to shop manual for correct procedure*
3.0.4.2 Remove and reinstall rear-wheel-drive transmission and torque converter*
3.0.4.3 Remove and reinstall transaxle and torque converter assembly*
3.0.4.4 Disassemble, clean, and inspect rear-wheel-drive transmission*
3.0.4.5 Disassemble, clean, and inspect transaxle assembly*
3.0.4.6 Assemble rear-wheel-drive transmission*
3.0.4.7 Assemble transaxle*

* Advancing
** Futuring

COMPETENCY 3.0.5: Repair oil pump and converter*

COMPETENCY BUILDERS:

3.0.5.1 Refer to shop manual for correct procedure*
3.0.5.2 Inspect converter flex plate, attaching parts, pilot and pump drive, and seal areas*
3.0.5.3 Measure torque converter end play and check for interference*
3.0.5.4 Check stater clutch*
3.0.5.5 Inspect, measure, and replace oil pump housings, shafts, vanes, rotors, gears, valves, seals, and bushings*
3.0.5.6 Flush torque converter and transmission cooling system*
3.0.5.7 Perform lockup converter and control system checks*

COMPETENCY 3.0.6: Repair gear train, shafts, bushings, and case*

COMPETENCY BUILDERS:

3.0.6.1 Refer to shop manual for correct procedure*
3.0.6.2 Clean and check end play and/or preload and determine needed repairs*
3.0.6.3 Inspect, measure, and replace thrust washers and bearings*
3.0.6.4 Inspect and replace shafts*
3.0.6.5 Inspect oil delivery seal rings, including ring, ring groove, and sealing surface area*
3.0.6.6 Inspect and replace bushings*
3.0.6.7 Inspect, measure, and replace planetary gear assembly*
3.0.6.8 Inspect and repair or replace cases*
3.0.6.9 Inspect and repair or replace transaxle drive-link chains, sprockets, gears, bearings, and bushings*
3.0.6.10 Inspect, measure, adjust, and repair or replace transaxle final drive components*
3.0.6.11 Inspect and repair or replace parking pawl, shaft, springs, and retainer*

COMPETENCY 3.0.7: Repair friction and reaction units*

COMPETENCY BUILDERS:

3.0.7.1 Refer to shop manual for proper procedure*
3.0.7.2 Inspect and repair or replace clutch assembly*
3.0.7.3 Measure and adjust clutch pack clearance*
3.0.7.4 Air-test clutch pack and servo assemblies*
3.0.7.5 Inspect and replace roller and sprag clutches*
3.0.7.6 Inspect and replace bands and drums*

* Advancing
** Futuring

COMPETENCY 3.0.8: Repair non-gear-driven transmission/transaxle*

COMPETENCY BUILDERS:

3.0.8.1 Refer to shop manual for proper procedure
3.0.8.2 Inspect and replace belts
3.0.8.3 Check and replace transmission lubricants
3.0.8.4 Remove and replace transmission

UNIT 4: Manual Drive Train and Axles

COMPETENCY 4.0.1: Troubleshoot and repair clutch

COMPETENCY BUILDERS:

4.0.1.1 Refer to shop manual for proper procedure
4.0.1.2 Diagnose clutch noise, binding, slippage, pulsation, and chatter problems and determine needed repairs
4.0.1.3 Inspect, adjust, and repair or replace clutch pedal linkage, cables and automatic adjuster mechanisms, brackets, bushings, pivots, and springs
4.0.1.4 Inspect, adjust, and repair or replace hydraulic clutch slave and master cylinders, lines, and hoses
4.0.1.5 Inspect and adjust or replace release (throw-out) bearing, lever, and pivot
4.0.1.6 Inspect and replace clutch pressure plate assembly and clutch disc
4.0.1.7 Inspect, remove, and replace crankshaft pilot bearing/bushing
4.0.1.8 Inspect and repair or replace flywheel and ring gear
4.0.1.9 Inspect engine block, clutch (bell) housing, and transmission case mating surfaces and determine needed repairs
4.0.1.10 Measure flywheel-to-block run-out and crankshaft end play and determine needed repairs
4.0.1.11 Measure clutch (bell) housing bore-to-crankshaft run-out and face squareness and determine needed repairs

* Advancing
** Futuring

COMPETENCY 4.0.2: Troubleshoot and repair transmission*

COMPETENCY BUILDERS:

4.0.2.1 Refer to shop manual for proper procedure*
4.0.2.2 Diagnose transmission noise, hard shifting, jumping out of gear, and fluid leakage problems and determine needed repairs*
4.0.2.3 Inspect, adjust, and replace transmission shift linkages, brackets, bushings, cables, pivots, and levers*
4.0.2.4 Inspect, replace, and align power train mounts*
4.0.2.5 Inspect and replace transmission gaskets, seals, and sealants and inspect sealing surfaces*
4.0.2.6 Remove and reinstall transmission*
4.0.2.7 Disassemble and clean transmission components*
4.0.2.8 Inspect, adjust, and replace transmission shift cover, fork, grommets, levers, shafts, sleeves, and detent*
4.0.2.9 Inspect and replace main shaft, gears, thrust washers, bearings, and retainers*
4.0.2.10 Inspect and replace synchronizer hub, sleeve, keys (inserts), springs, and blocking rings*
4.0.2.11 Inspect and replace counter (cluster) gear, shaft, bearings, thrust washers, and retainers
4.0.2.12 Check end play of countershaft and adjust as needed*
4.0.2.13 Inspect and replace reverse idler gear, shaft, bearings, thrust washers, and retainers
4.0.2.14 Check end play of reverse idler shaft and adjust as needed*
4.0.2.15 Inspect lubrication devices*
4.0.2.16 Inspect and repair or replace extension housing and transmission case*
4.0.2.17 Inspect and replace speedometer drive gear, driven gear, and retainers*

* Advancing
** Futuring

COMPETENCY 4.0.3: Troubleshoot and repair transaxle*

COMPETENCY BUILDERS:

4.0.3.1 Refer to shop manual for proper procedure*
4.0.3.2 Diagnose transaxle noise, hard shifting, jumping out of gear, and fluid leakage problems and determine needed repairs*
4.0.3.3 Inspect, adjust, and replace transaxle shift linkages, brackets, bushings, cables, pivots, and levers*
4.0.3.4 Inspect, replace, and align power train mounts*
4.0.3.5 Inspect and replace transaxle gaskets, seals, and sealants*
4.0.3.6 Inspect sealing surfaces*
4.0.3.7 Remove and replace transaxle final drive*
4.0.3.8 Disassemble and clean transaxle final drive*
4.0.3.9 Inspect, adjust, and replace transaxle shift cover, forks, levers, grommets, shafts, sleeves, detent mechanisms, interlocks, and springs*
4.0.3.10 Inspect and replace input (clutch) shaft and bearings*
4.0.3.11 Inspect and replace output shaft, gears, thrust washers, bearings, and retainers*
4.0.3.12 Measure end play/preload using shim/spacer selection procedure on all transaxle shafts and adjust as needed*
4.0.3.13 Inspect and replace synchronizer hub, sleeve, keys (inserts), springs, and blocking rings*
4.0.3.14 Inspect and replace reverse idler gear, shaft, bearings, thrust washers, and retainers*
4.0.3.15 Inspect and repair or replace transaxle case, including mating surfaces, bores, bushings, and vents*
4.0.3.16 Inspect and replace speedometer drive gear, driven gear, and retainers*
4.0.3.17 Diagnose noise and vibration problems in differential case assembly and determine needed repairs*
4.0.3.18 Remove and reinstall differential case assembly*
4.0.3.19 Inspect, measure, adjust, and replace differential case assembly, including pinion gears (spiders), shaft, side gears, thrust washers, and case*
4.0.3.20 Inspect and replace differential side bearings*
4.0.3.21 Inspect lubrication devices*

* Advancing
** Futuring

COMPETENCY 4.0.4: Troubleshoot drive (half) shaft and universal joint

COMPETENCY BUILDERS:

4.0.4.1 Refer to shop manual for proper procedure
4.0.4.2 Diagnose noise and vibration problems in front-wheel-drive (FWD) and rear-wheel-drive (RWD) shaft and universal/constant-velocity (CV) joint and determine needed repairs
4.0.4.3 Inspect, service, and replace FWD and RWD shafts, yokes, boots, and universal/CV joints
4.0.4.4 Inspect, service, and replace shaft center support bearings
4.0.4.5 Check shaft balance and run-out and determine needed repairs
4.0.4.6 Measure and adjust shaft angles

COMPETENCY 4.0.5: Troubleshoot and repair ring and pinion gears/differential case assembly

COMPETENCY BUILDERS:

4.0.5.1 Refer to shop manual for proper procedure
4.0.5.2 Diagnose noise and vibration problems and determine needed repairs
4.0.5.3 Diagnose fluid leakage problems and determine needed repairs
4.0.5.4 Inspect and replace companion flange and pinion seal
4.0.5.5 Clean and inspect ring gear, measure run-out, and determine needed repairs
4.0.5.6 Remove and inspect drive pinion gear, spacers, sleeves, and bearings
4.0.5.7 Measure and adjust drive pinion depth
4.0.5.8 Measure and adjust drive pinion bearing preload
4.0.5.9 Measure and adjust side bearing preload and ring and pinion backlash on a differential carrier assembly (threaded cup and shim types)
4.0.5.10 Check ring and pinion tooth contact pattern and make needed adjustments
4.0.5.11 Disassemble, inspect, measure, and adjust or replace differential case assembly including pinion gears (spiders), shaft, side gears, thrust washers, axle shaft bearings, seals, and case
4.0.5.12 Inspect and replace differential side bearings
4.0.5.13 Reassemble and reinstall differential case assembly, measure run-out, and determine needed repairs

* Advancing
** Futuring

COMPETENCY 4.0.6: Troubleshoot and repair limited slip differential

COMPETENCY BUILDERS:

4.0.6.1 Refer to shop manual for proper procedure
4.0.6.2 Diagnose noise, slippage, and chatter problems and determine needed repairs
4.0.6.3 Inspect and flush differential housing and refill with correct lubricant
4.0.6.4 Inspect, adjust, and replace cone and clutch plates
4.0.6.5 Measure rotating torque at a rear wheel and determine needed repairs

COMPETENCY 4.0.7: Troubleshoot and repair rear-axle shafts

COMPETENCY BUILDERS:

4.0.7.1 Refer to shop manual for proper procedure
4.0.7.2 Diagnose noise, vibration, and fluid leakage in rear-axle shafts, bearings, and seal and determine needed repairs
4.0.7.3 Diagnose fluid leakage problems and determine needed repairs
4.0.7.4 Inspect and replace rear-axle shaft wheel studs
4.0.7.5 Remove and replace rear-axle shafts
4.0.7.6 Inspect and replace rear-axle shaft seals, bearings, and retainers
4.0.7.7 Remove and replace pressed-on axle shaft bearings
4.0.7.8 Measure rear-axle flange run-out and shaft end play and determine needed repairs

* Advancing
** Futuring

COMPETENCY 4.0.8: Troubleshoot and repair four-wheel-drive component

COMPETENCY BUILDERS:

4.0.8.1 Refer to shop manual for proper procedure
4.0.8.2 Diagnose four-wheel-drive assembly noise, vibration, and unusual steering problems and determine needed repairs
4.0.8.3 Inspect, adjust, and repair transfer case shifting mechanisms, bushings, mounts, levers, and brackets
4.0.8.4 Remove and reinstall four-wheel-drive transfer case
4.0.8.5 Inspect and repair four-wheel-drive transfer case and components and check lube level
4.0.8.6 Inspect and repair or replace drive (propeller) shafts and universal joints
4.0.8.7 Inspect and repair or replace drive axle knuckles and axle shafts
4.0.8.8 Inspect and repair or replace wheel bearings and locking hubs
4.0.8.9 Check four-wheel-drive unit seals and remote vents

UNIT 5: Suspension and Steering

COMPETENCY 5.0.1: Troubleshoot and repair steering systems*

COMPETENCY BUILDERS:

5.0.1.1 Refer to shop manual for proper procedure*
5.0.1.2 Disable inflatable restraints system*
5.0.1.3 Diagnose noises, looseness, and binding problems in steering column, including tilt and locking mechanisms, and determine needed repairs*
5.0.1.4 Diagnose power non-rack-and-pinion steering gear binding, uneven turning effort, looseness, hard steering, and fluid leakage problems and determine needed repairs*
5.0.1.5 Diagnose manual non-rack-and-pinion steering gear binding, uneven turning effort, looseness, hard steering, and fluid leakage problems and determine needed repairs*
5.0.1.6 Diagnose power rack-and-pinion steering gear vibration, looseness, and hard steering and determine needed repairs*
5.0.1.7 Diagnose manual rack-and-pinion steering gear vibration, looseness, and hard steering and determine needed repairs*

(continued)

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5.0.1.8 Inspect and replace steering shafts, bearings, retainers, universal joint(s), flexible coupling(s), collapsible columns, and steering wheel*
5.0.1.9 Remove and replace manual and power non-rack-and-pinion steering gears*
5.0.1.10 Disassemble, inspect, repair, and reassemble manual non-rack-and-pinion steering gears*
5.0.1.11 Adjust worm-bearing preload and sector lash of manual and power non-rack-and-pinion steering gears*
5.0.1.12 Remove and replace manual and power rack-and-pinion steering gears*
5.0.1.13 Disassemble, inspect, repair, and reassemble manual and power rack-and-pinion steering gears*
5.0.1.14 Adjust manual and power rack-and-pinion steering gears*
5.0.1.15 Inspect and replace inner tie-rod ends (sockets) and bellows boots of manual and power rack-and-pinion steering gears*
5.0.1.16 Inspect and replace mounting bushings and brackets of rack-and-pinion steering gear*
5.0.1.17 Inspect manual and power steering fluid levels and condition*
5.0.1.18 Flush power steering system*
5.0.1.19 Diagnose power steering fluid leakage and determine needed repairs*
5.0.1.20 Inspect, adjust, and replace power steering pump belt(s)*
5.0.1.21 Remove and replace power steering pump and inspect pump mounts*
5.0.1.22 Inspect and replace power steering pump seals and gaskets*
5.0.1.23 Inspect and replace power steering pump pulley*
5.0.1.24 Perform power steering system pressure test and determine needed repairs*
5.0.1.25 Inspect and replace power steering hoses and fittings*
5.0.1.26 Inspect and replace power non-rack-and-pinion steering gear seals and gaskets*
5.0.1.27 Inspect and replace pitman arm*
5.0.1.28 Inspect and replace relay (center link, intermediate) rod*
5.0.1.29 Inspect and replace idler arm and mountings*
5.0.1.30 Inspect, replace, and adjust tie rod*
5.0.1.31 Inspect and replace steering linkage damper*
5.0.1.32 Check alignment*

* Advancing
** Futuring

COMPETENCY 5.0.2: Troubleshoot and repair front suspension systems

COMPETENCY BUILDERS:

5.0.2.1 Refer to shop manual for proper procedure*
5.0.2.2 Diagnose noises, body sway, and uneven riding height in short-arm and long-arm type suspension system and determine needed repairs*
5.0.2.3 Diagnose noises, body sway, and uneven riding height in MacPherson strut suspension system and determine needed repairs*
5.0.2.4 Inspect and replace upper and lower control arms*
5.0.2.5 Inspect and replace bushings, shafts, and rebound bumpers of upper and lower control arms*
5.0.2.6 Inspect, adjust, and replace strut rods and bushings*
5.0.2.7 Inspect and replace upper and lower ball joints on short-arm and long-arm suspension systems*
5.0.2.8 Inspect and replace steering knuckle assemblies*
5.0.2.9 Inspect and replace coil springs and spring insulators on short-arm and long-arm front suspension systems*
5.0.2.10 Inspect, replace, and adjust torsion bars on front suspension system and inspect mounts*
5.0.2.11 Inspect and replace stabilizer bar bushings, brackets, and links*
5.0.2.12 Inspect and replace ball joints on MacPherson strut suspension systems*
5.0.2.13 Inspect and replace MacPherson strut cartridge or assembly*
5.0.2.14 Inspect and replace front MacPherson strut coil spring and insulators*
5.0.2.15 Lubricate suspension and steering systems*
5.0.2.16 Check alignment*

COMPETENCY 5.0.3: Troubleshoot and repair rear suspension systems

COMPETENCY BUILDERS:

5.0.3.1 Refer to shop manual for proper procedure*
5.0.3.2 Inspect and replace coil springs and spring insulators of rear suspension system *
5.0.3.3 Inspect and replace transverse links, control arms, ball joints, tie rods, bushings, and mounts of rear suspension system*
5.0.3.4 Inspect and replace leaf springs, leaf-spring insulators (silencers), shackles, brackets, bushings, and mounts of rear suspension system*
5.0.3.5 Inspect and replace rear MacPherson strut cartridge or assembly of rear suspension system*
5.0.3.6 Inspect and replace rear MacPherson strut coil spring and insulators*
5.0.3.7 Inspect rear-wheel-drive axle assembly for bending, warpage, and misalignment*
5.0.3.8 Lubricate steering and suspension systems*

COMPETENCY 5.0.4: Troubleshoot and repair shock absorbers and electronically controlled suspension systems

COMPETENCY BUILDERS:

5.0.4.1 Refer to shop manual for proper procedure
5.0.4.2 Inspect and replace shock absorbers
5.0.4.3 Inspect and repair or replace front and/or rear wheel bearings and hubs
5.0.4.4 Inspect, adjust, and repair or replace components of electronically controlled suspension systems

* Advancing
** Futuring

COMPETENCY 5.0.5: Troubleshoot, adjust, and repair wheel alignment

COMPETENCY BUILDERS:

5.0.5.1 Refer to shop manual for proper procedure
5.0.5.2 Diagnose vehicle wandering, pulling, hard steering, and poor steering return and determine needed repairs
5.0.5.3 Check pressure, condition, and size of tire
5.0.5.4 Measure vehicle riding height and determine needed repairs
5.0.5.5 Check and adjust front-wheel and rear-wheel camber on suspension systems
5.0.5.6 Check front-wheel and rear-wheel camber on nonadjustable suspension systems and determine needed repairs
5.0.5.7 Check and adjust caster on suspension systems
5.0.5.8 Check caster on nonadjustable suspension systems and determine needed repairs
5.0.5.9 Check and adjust front-wheel toe
5.0.5.10 Center steering wheel
5.0.5.11 Check toe-out-on-turns (turning radius) and determine needed repairs
5.0.5.12 Check steering axis inclination (SAI), king pin inclination (KPI), and included angle and determine needed repairs
5.0.5.13 Check and adjust rear-wheel toe
5.0.5.14 Check rear-wheel thrust-angle and determine needed repairs
5.0.5.15 Check for front-wheel setback and determine needed repairs

COMPETENCY 5.0.6: Diagnose and repair wheel and tire

COMPETENCY BUILDERS:

5.0.6.1 Refer to shop manual for proper procedure
5.0.6.2 Diagnose unusual tire wear patterns and determine needed repairs
5.0.6.3 Inspect tires and check and adjust air pressure
5.0.6.4 Diagnose wheel/tire vibration, shimmy, and tramp and determine needed repairs
5.0.6.5 Rotate tires according to manufacturer's or standard recommendations
5.0.6.6 Measure wheel, tire, axle, and hub run-out and determine needed repairs
5.0.6.7 Diagnose tire pull (lead) problems and determine needed repairs
5.0.6.8 Balance static or dynamic wheel-and-tire assembly
5.0.6.9 Dismount, inspect, repair, and remount tire on wheel
5.0.6.10 Reinstall wheel and torque lug nuts

* Advancing
** Futuring

UNIT 6: Brakes

COMPETENCY 6.0.1: Troubleshoot and repair hydraulic system

COMPETENCY BUILDERS:

6.0.1.1 Refer to shop manual for proper procedure
6.0.1.2 Verify customer complaint
6.0.1.3 Diagnose poor stopping or dragging caused by master cylinder and determine needed repairs
6.0.1.4 Diagnose poor stopping, dragging, high/low pedal, or hard pedal caused by step-bore master cylinder or internal valves and determine needed repairs
6.0.1.5 Measure and adjust pedal pushrod length
6.0.1.6 Check master cylinder for internal and external leaks and proper operation and determine needed repairs
6.0.1.7 Remove, bench bleed, and replace master cylinder
6.0.1.8 Diagnose poor stopping, pulling, or dragging caused by brake fluid, lines, or hoses and determine needed repairs
6.0.1.9 Inspect brake lines and fittings for leaks, dents, kinks, rust, cracks, or wear and tighten loose fittings and supports
6.0.1.10 Inspect flexible brake hoses for leaks, kinks, cracks, bulging, or wear and tighten loose fittings and supports
6.0.1.11 Replace double flare and ISO brake lines, hoses, fittings, and supports
6.0.1.12 Select and install brake fluids
6.0.1.13 Diagnose poor stopping, pulling, or dragging caused by hydraulic system valve(s)
6.0.1.14 Inspect, test, and replace metering (hold-off), proportioning (balance), pressure differential, and combination valves
6.0.1.15 Inspect, test, replace, and adjust load-sensing or height-sensing proportioning valve(s)
6.0.1.16 Inspect, test, and replace brake warning light system switch and wiring
6.0.1.17 Reset brake pressure differential valve
6.0.1.18 Bleed (using manual, pressure, vacuum, or surge method) and/or flush hydraulic system
6.0.1.19 Check and adjust master cylinder fluid levels
6.0.1.20 Verify stoplight switch operation

* Advancing
** Futuring

COMPETENCY 6.0.2: Troubleshoot and repair drum brake

COMPETENCY BUILDERS:

6.0.2.1 Refer to shop manual for proper procedure
6.0.2.2 Diagnose poor stopping, pulling, or dragging caused by drum-brake wheel assembly and determine needed repairs
6.0.2.3 Diagnose poor stopping, noise, pulling, grabbing, dragging, or pedal pulsation caused by drum-brake mechanical assembly and determine needed repairs
6.0.2.4 Remove, clean, inspect, and measure brake drums
6.0.2.5 Mount brake drum on lathe and machine without exceeding drum specifications
6.0.2.6 Remove, clean, and inspect brake shoes/linings, springs, pins, clips, levers, adjusters/self-adjusters, and other related brake hardware and determine needed repairs
6.0.2.7 Clean and remove loose dirt, rust, and scale on brake backing (support) plates
6.0.2.8 Inspect, remove, and reinstall brake backing (support)
6.0.2.9 Remove and reinstall or replace wheel cylinders
6.0.2.10 Disassemble and clean wheel cylinder assembly
6.0.2.11 Inspect wheel cylinder assembly parts for wear, rust, scoring, and damage
6.0.2.12 Hone wheel cylinder
6.0.2.13 Replace cups, boots, and damaged or worn parts of wheel cylinder assembly
6.0.2.14 Lubricate brake shoe support pads on backing (support) plate, adjuster/self-adjuster mechanisms, and other brake hardware
6.0.2.15 Determine correct brake shoe application
6.0.2.16 Install brake shoes and related hardware
6.0.2.17 Adjust brake shoes and reinstall brake drums or drum/hub assemblies and wheel bearings
6.0.2.18 Reinstall wheel, torque lug nuts, and make final checks and adjustments

* Advancing
** Futuring

COMPETENCY 6.0.3: Troubleshoot and repair disc brake

COMPETENCY BUILDERS:

6.0.3.1 Refer to shop manual for proper procedure
6.0.3.2 Diagnose poor stopping, pulling, or dragging caused by disc-brake caliper assembly and determine needed repairs
6.0.3.3 Diagnose poor stopping, noise, pulling, grabbing, dragging, or pedal pulsation caused by disc-brake mechanical assembly and determine needed repairs
6.0.3.4 Remove and support caliper assembly from mountings
6.0.3.5 Clean and inspect caliper housing for leaks and damage
6.0.3.6 Clean and inspect caliper mountings and slides for wear and damage
6.0.3.7 Remove, disassemble, and clean caliper assembly
6.0.3.8 Inspect caliper assembly parts for wear, rust, scoring, and damage
6.0.3.9 Replace all caliper assembly seals, boots, and any damaged or worn parts
6.0.3.10 Visually inspect internal condition of lines and hoses
6.0.3.11 Reassemble and reinstall caliper
6.0.3.12 Clean and inspect rotor
6.0.3.13 Measure rotor with dial indicator and micrometer
6.0.3.14 Remove rotor, mount on lathe, and machine without exceeding specifications
6.0.3.15 Apply nondirectional finish as needed
6.0.3.16 Determine correct brake pad application
6.0.3.17 Lubricate caliper guides and slides with proper lubricant
6.0.3.18 Install right and left pads, calipers, and related attaching hardware
6.0.3.19 Adjust calipers with integrated parking brakes
6.0.3.20 Fill master cylinder with recommended fluid and seat pads and inspect caliper for leaks
6.0.3.21 Reinstall wheel, torque lug nuts, and perform final checks and adjustments

* Advancing
** Futuring

COMPETENCY 6.0.4: Troubleshoot and repair power-assist units*

COMPETENCY BUILDERS:

6.0.4.1 Refer to shop manual for proper procedure*
6.0.4.2 Test pedal free travel with and without engine running*
6.0.4.3 Check power booster operation*
6.0.4.4 Check manifold or auxiliary pump vacuum supply to vacuum-type power booster with a vacuum gauge*
6.0.4.5 Inspect vacuum-type power booster unit for vacuum leaks*
6.0.4.6 Inspect check valve for proper operation and repair or replace parts as needed*
6.0.4.7 Inspect and test hydro-boost system and accumulator for leaks and proper operation*
6.0.4.8 Depressurize and repair or replace parts of hydro-boost system and accumulator as needed*
6.0.4.9 Inspect and test electrically controlled power-boost system for leaks and proper operation
6.0.4.10 Depressurize and repair or replace power-boost system parts as needed*

COMPETENCY 6.0.5: Troubleshoot and repair antilock brakes*

COMPETENCY BUILDERS:

6.0.5.1 Refer to shop manual for proper procedure*
6.0.5.2 Verify complaint*
6.0.5.3 Road test vehicle*
6.0.5.4 Perform comprehensive brake warning system diagnosis and determine needed repairs*
6.0.5.5 Repair or replace components as needed*

* Advancing
** Futuring

COMPETENCY 6.0.6: Troubleshoot and repair miscellaneous components

COMPETENCY BUILDERS:

6.0.6.1 Refer to shop manual for proper procedure*
6.0.6.2 Diagnose wheel bearing noises, wheel shimmy and vibration problems and determine needed repairs
6.0.6.3 Remove, clean, inspect, and repack or replace and pack wheel bearings
6.0.6.4 Replace seals and adjust wheel bearings
6.0.6.5 Check parking brake system
6.0.6.6 Inspect cables and parts of parking brake system for wear, rusting, binding and corrosion
6.0.6.7 Clean and replace parts of parking brake system as needed
6.0.6.8 Lubricate parking brake assembly
6.0.6.9 Adjust parking brake assembly and check operation
6.0.6.10 Test parking indicator lights, switches, and wiring
6.0.6.11 Test, adjust, and repair or replace brake stoplight switch and wiring

* Advancing
** Futuring

UNIT 7: Electrical Systems

COMPETENCY 7.0.1: Troubleshoot general electrical system

COMPETENCY BUILDERS:

7.0.1.1 Refer to shop manual for proper procedure
7.0.1.2 Use wiring diagrams to troubleshoot electrical circuits
7.0.1.3 Check continuity in noncomputerized electrical circuits using test light and determine needed repairs
7.0.1.4 Check continuity in computerized circuits using digital ohmmeter and determine needed repairs
7.0.1.5 Check applied voltages and voltage drops in electrical circuits using analog and digital voltmeters and determine needed repairs
7.0.1.6 Check applied voltages in electrical circuits using oscilloscope and determine needed repairs
7.0.1.7 Check current flow in electrical circuits and components using ammeter and determine needed repairs
7.0.1.8 Check continuity and resistances in electrical circuits and components using analog and digital ohmmeters and determine needed repairs
7.0.1.9 Troubleshoot electrical circuits using fused jumper wires
7.0.1.10 Use short-finder instrument to determine needed repairs
7.0.1.11 Determine splicing techniques for wiring repairs
7.0.1.12 Diagnose abnormal battery drain and determine needed repairs
7.0.1.13 Inspect, test, and replace fusible links, circuit breakers, and fuses

COMPETENCY 7.0.2: Troubleshoot and repair battery

COMPETENCY BUILDERS:

7.0.2.1 Refer to shop manual for proper procedure
7.0.2.2 Perform battery state-of-charge test
7.0.2.3 Perform battery capacity tests (load, high-rate discharge) and determine needed repairs
7.0.2.4 Perform battery charge test and determine needed repairs
7.0.2.5 Inspect, clean, and fill battery
7.0.2.6 Replace or reinstall battery
7.0.2.7 Perform slow or fast battery charge
7.0.2.8 Inspect, clean, and repair or replace battery cables, connectors, and clamps
7.0.2.9 Use jumper cables and booster battery or auxiliary power supply

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COMPETENCY 7.0.3: Troubleshoot and repair starting system

COMPETENCY BUILDERS:

7.0.3.1 Refer to shop manual for proper procedure
7.0.3.2 Perform starter current draw test and determine needed repairs
7.0.3.3 Perform starter circuit voltage drop tests and determine needed repairs
7.0.3.4 Inspect, test, and repair or replace switches, connectors, and wires of starter control circuits
7.0.3.5 Inspect, test, and replace starter relays and solenoids
7.0.3.6 Remove and replace or reinstall starter
7.0.3.7 Disassemble, clean, inspect, test, and replace starter components
7.0.3.8 Perform bench test

COMPETENCY 7.0.4: Troubleshoot and repair charging system

COMPETENCY BUILDERS:

7.0.4.1 Refer to shop manual for proper procedure
7.0.4.2 Diagnose undercharge, no-charge, or overcharge condition
7.0.4.3 Inspect, adjust, and replace alternator drive belts, pulleys, and fans
7.0.4.4 Perform charging system output test and determine needed repairs
7.0.4.5 Remove and replace regulator
7.0.4.6 Perform charging circuit voltage drop tests and determine needed repairs
7.0.4.7 Inspect and repair or replace connectors and wires of charging circuits
7.0.4.8 Perform alternator oscilloscope pattern tests and determine needed repairs
7.0.4.9 Remove and replace or reinstall alternator
7.0.4.10 Disassemble, clean, inspect, and replace alternator components

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COMPETENCY 7.0.5: Troubleshoot and repair headlights, parking lights, taillights, dash lights, and courtesty lights

COMPETENCY BUILDERS:

7.0.5.1 Refer to shop manual for proper procedure
7.0.5.2 Diagnose headlight malfunction
7.0.5.3 Inspect, replace, and aim headlights/bulbs
7.0.5.4 Inspect, test, and repair or replace headlight and dimmer switches, relays, sockets, connectors, sensors, and wires of headlight circuits
7.0.5.5 Diagnose headlight assembly malfunction
7.0.5.6 Inspect, test, and repair or replace motors, switches, relays, connectors, and wires of retractable headlight assembly circuits
7.0.5.7 Diagnose taillight malfunction
7.0.5.8 Inspect, test, and repair or replace switches, relays, bulbs, sockets, connectors, and wires of parking light and taillight circuits
7.0.5.9 Diagnose dash light circuit malfunction
7.0.5.10 Inspect, test, and repair or replace switches, relays, bulbs, sockets, connectors, wires, and printed circuit boards of dash light circuits
7.0.5.11 Diagnose courtesy light malfunction
7.0.5.12 Inspect, test, and repair or replace switches, relays, bulbs, sockets, connectors, and wires in courtesy light circuits

COMPETENCY 7.0.6: Troubleshoot and repair stoplights, turn signals, hazard lights, and backup lights

COMPETENCY BUILDERS:

7.0.6.1 Refer to shop manual for proper procedure
7.0.6.2 Diagnose stoplight malfunction
7.0.6.3 Inspect, test, and adjust or replace stoplight switch
7.0.6.4 Inspect, test, and repair or replace bulbs, sockets, connectors, and wires of stoplight circuits
7.0.6.5 Diagnose turn signal or hazard light malfunctions
7.0.6.6 Inspect, test, and replace turn signal and hazard light switches and flasher units
7.0.6.7 Inspect, test, and repair or replace bulbs, sockets, connectors, and wires of turn signal and hazard light circuits
7.0.6.8 Diagnose backup light malfunction
7.0.6.9 Inspect, test, and repair or replace switches, bulbs, sockets, connectors, and wires of backup light circuits

* Advancing
** Futuring

COMPETENCY 7.0.7: Troubleshoot and repair gauges, warning devices, and driver information systems*

COMPETENCY BUILDERS:

7.0.7.1 Refer to shop manual for proper procedure*
7.0.7.2 Avoid static electrical discharge to electronic components*
7.0.7.3 Diagnose abnormal gauge readings (Note: Diagnosing abnormal charging system gauge readings is limited to dash units and their electrical connections; other causes of abnormal charging system gauge readings are covered in Competency 7.0.4: Troubleshoot and repair charging system)*
7.0.7.4 Test and replace gauge circuit voltage regulators (limiters)*
7.0.7.5 Inspect, test, and replace gauges and gauge sending units*
7.0.7.6 Inspect, test, and repair or replace connectors, wires, and printed circuit boards of gauge circuits*
7.0.7.7 Diagnose driver-information system malfunctions* (Note: Diagnosing abnormal charging system warning light operation is limited to dash units and their electrical connections; other causes of abnormal charging system warning light operation are covered in Competency 7.0.4: Troubleshoot and repair charging system)
7.0.7.8 Inspect, test, and repair or replace bulbs, sockets, connectors, wires, and electronic components of warning light or driver-information system circuits*
7.0.7.9 Diagnose malfunctions of audible warning devices*
7.0.7.10 Inspect, test, and repair or replace switches, relays, timers, electronic components, printed circuits, connectors, and wires of audible warning device circuits*
7.0.7.11 Diagnose malfunctions of electronic digital instrument cluster*
7.0.7.12 Inspect, test, and repair or replace sensors, sending units, connectors, and wires of electronic digital instrument circuits*

* Advancing
** Futuring

COMPETENCY 7.0.8: Troubleshoot and repair horn(s), wiper, and washer

COMPETENCY BUILDERS:

7.0.8.1 Refer to shop manual for proper procedure
7.0.8.2 Diagnose horn malfunctions
7.0.8.3 Test, and repair or replace horn(s), horn relay, horn button (switch), connectors, and wires of horn circuits
7.0.8.4 Diagnose wiper malfunction
7.0.8.5 Diagnose wiper speed control and park malfunctions
7.0.8.6 Replace delay (pulsing) wiper speed controls
7.0.8.7 Replace wiper motor, wiper motor resistor, and park switch or relay
7.0.8.8 Repair or replace switches, connectors, and wires of wiper circuits
7.0.8.9 Diagnose windshield-washer malfunction
7.0.8.10 Replace washer motor, pump, and/or relay assembly
7.0.8.11 Repair or replace switches, connectors, and wires of washer circuits

COMPETENCY 7.0.9: Troubleshoot and repair accessory components*

COMPETENCY BUILDERS:

7.0.9.1 Refer to shop manual for proper procedure*
7.0.9.2 Diagnose malfunctions of power-driven window(s) and/or sunroof*
7.0.9.3 Adjust and repair or replace power-driven window(s) and/or sunroof regulators (linkages)*
7.0.9.4 Repair or replace switches, relays, motors, connectors, and wires of power-driven window(s) and/or sunroof circuits*
7.0.9.5 Diagnose power seat malfunctions*
7.0.9.6 Repair or replace switches, relays, solenoids, motors, connectors, and wires of power seat circuits*
7.0.9.7 Adjust or replace power seat gear box, cables, and slave units*
7.0.9.8 Diagnose malfunctions of rear window defogger*
7.0.9.9 Repair or replace switches, relays, window grid, blower motors, connectors, and wires of rear window defogger circuits*
7.0.9.10 Diagnose circuit malfunctions of electric door and hatch or trunk lock circuit malfunction*
7.0.9.11 Repair or replace switches, relays, actuators, connectors, and wires of electric door and hatch or trunk lock circuits*
7.0.9.12 Diagnose malfunctions of keyless lock/unlock device*

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* Advancing
** Futuring

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7.0.9.13 Repair or replace components, connectors, and wires of keyless lock/unlock device circuits*
7.0.9.14 Diagnose malfunctions of electrically operated convertible tops*
7.0.9.15 Repair or replace motors, switches, relays, connectors, and wires of electrically operated convertible top circuits*
7.0.9.16 Diagnose malfunctions of electrically operated and electrically heated components (e.g., mirrors, seats, windshields)*
7.0.9.17 Repair or replace motors, heating units, switches, relays, connectors, and wires of electrically operated and electrically heated component circuits*
7.0.9.18 Diagnose radio malfunction*
7.0.9.19 Repair or replace grounds, connectors, and wires of sound system circuits*
7.0.9.20 Inspect, test, and replace speakers*
7.0.9.21 Inspect, test, and replace radio antenna and lead*
7.0.9.22 Inspect, test, and repair or replace switches, motor, connectors, and wires of power antenna circuits*
7.0.9.23 Replace noise suppression components*
7.0.9.24 Trim (adjust) radio antenna*
7.0.9.25 Inspect, test, and repair or replace case, integral fuse, connectors, and wires of cigarette lighter circuit*
7.0.9.26 Inspect, test, and repair or replace clock, connectors, and wires of clock circuits*
7.0.9.27 Diagnose cruise control system malfunction*
7.0.9.28 Repair or replace switches, relays, electronic control units, speed signal generators, connectors, and wires of cruise control circuits*
7.0.9.29 Adjust and repair or replace cruise control speedometer cables, regulator, servo, and hoses*
7.0.9.30 Diagnose antitheft system malfunction*
7.0.9.31 Repair or replace components, switches, relays, connectors, and wires of antitheft system circuits*
7.0.9.32 Diagnose airbag warning light malfunction*
7.0.9.33 Inspect, test, and repair or replace airbag, airbag module, sensors, connectors, and wires of airbag system circuits according to manufacturers' safety procedures*

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UNIT 8: Heating and Air-Conditioning (AC)

COMPETENCY 8.0.1: Troubleshoot and repair AC system

COMPETENCY BUILDERS:

8.0.1.1 Refer to shop manual for proper procedure
8.0.1.2 Diagnose noises in AC system
8.0.1.3 Performance-test AC system and determine needed repairs
8.0.1.4 Leak-test AC system and determine needed repairs
8.0.1.5 Discharge, evacuate, and charge AC system using recovery/recycling and charging equipment
8.0.1.6 Inspect oil condition
8.0.1.7 Measure and add oil to AC system

COMPETENCY 8.0.2: Troubleshoot and repair compressor and clutch*

COMPETENCY BUILDERS:

8.0.2.1 Refer to shop manual for proper procedure*
8.0.2.2 Diagnose interruptions of AC system by pressure protection devices and determine needed repairs*
8.0.2.3 Replace AC system pressure protection devices
8.0.2.4 Inspect, adjust, and replace AC compressor drive belts and pulleys*
8.0.2.5 Inspect, test, and repair or replace AC compressor clutch components or assembly*
8.0.2.6 Remove and replace AC compressor and mountings*
8.0.2.7 Inspect and replace AC compressor shaft seal assembly(ies)*
8.0.2.8 Inspect and replace AC compressor valve assembly(ies) and gasket(s) or O-ring(s)*

* Advancing
** Futuring

COMPETENCY 8.0.3: Troubleshoot and repair evaporator, receiver/drier, and condenser*

COMPETENCY BUILDERS:

8.0.3.1 Refer to shop manual for proper procedure*
8.0.3.2 Diagnose AC system problems caused by too much moisture in refrigerant*
8.0.3.3 Install AC system filter*
8.0.3.4 Inspect and repair or replace AC system mufflers, hoses, lines, fittings, and seals*
8.0.3.5 Inspect AC condenser for airflow restrictions and clean and straighten fins*
8.0.3.6 Inspect, test, and replace AC system condenser and mountings*
8.0.3.7 Inspect and replace receiver/drier or accumulator/drier
8.0.3.8 Inspect, test, and replace expansion valve or orifice (expansion) tube*
8.0.3.9 Inspect, test, and replace evaporator*
8.0.3.10 Inspect and repair or replace evaporator housing*
8.0.3.11 Inspect, test, and replace evaporator pressure control systems and devices*
8.0.3.12 Inspect and replace AC system service (gauge connection) valves*

COMPETENCY 8.0.4: Troubleshoot and repair heating and engine cooling systems

COMPETENCY BUILDERS:

8.0.4.1 Refer to shop manual for proper procedure
8.0.4.2 Diagnose temperature control problems and determine needed repairs
8.0.4.3 Diagnose window-fogging problems and determine needed repairs
8.0.4.4 Perform cooling system tests (pressure, combustion leakage, and temperature) and determine needed repairs
8.0.4.5 Inspect and replace engine cooling and heating system hoses and belts
8.0.4.6 Inspect, test, and replace radiator, pressure cap, and coolant recovery system
8.0.4.7 Inspect, test, and replace thermostat, bypass, and housing
8.0.4.8 Inspect coolant
8.0.4.9 Drain, flush, and refill system with recommended coolant
8.0.4.10 Bleed coolant system
8.0.4.11 Clean, inspect, test, and replace fan, electrical and mechnical fan clutchs, and fan shroud
8.0.4.12 Inspect, test, and replace heater/coolant control valve(s) (manual, vacuum, and electrical types)
8.0.4.13 Replace heater core

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COMPETENCY 8.0.5: Troubleshoot and repair operating systems and related electrical controls*

COMPETENCY BUILDERS:

8.0.5.1 Refer to shop manual for proper procedure*
8.0.5.2 Diagnose malfunctions in electrical controls*
8.0.5.3 Inspect, test, and repair or replace AC heater blower motors, resistors, switches, relays, wiring, and protection devices*
8.0.5.4 Inspect, test, adjust, and repair or replace AC-controlled engine idle systems*
8.0.5.5 Inspect, test, adjust, and repair or replace AC compressor load cutoff systems*
8.0.5.6 Inspect, test, and repair or replace fan motors, relays, switches, sensors, wiring, and protection devices of engine coolant or AC condenser*

COMPETENCY 8.0.6: Troubleshoot and repair vacuum and mechanical controls*

COMPETENCY BUILDERS:

8.0.6.1 Refer to shop manual for proper procedure*
8.0.6.2 Diagnose failures in vacuum and mechanical controls*
8.0.6.3 Inspect, test, and repair or replace AC/heater control panel assembly*
8.0.6.4 Inspect, test, adjust, and repair or replace AC/heater control cables and linkages*
8.0.6.5 Inspect, test, and repair or replace AC/heater vacuum control switches, hoses, diaphragms (motors), vacuum reservoir, check valve, and restrictors*
8.0.6.6 Inspect, test,and repair or replace AC/heater ducts, doors, hoses, and outlets*

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** Futuring

COMPETENCY 8.0.7: Troubleshoot and repair automatic and semiautomatic temperature control systems*

COMPETENCY BUILDERS:

8.0.7.1 Refer to shop manual for proper procedure*
8.0.7.2 Check automatic and semiautomatic heating, ventilation and air-conditioning (HVAC) control systems*
8.0.7.3 Inspect, test, and repair or replace in-vehicle ambient sensor systems*
8.0.7.4 Inspect, test, and repair or replace power servo (vacuum or electric) system*
8.0.7.5 Inspect, test, and repair or replace coolant temperature blower control system*
8.0.7.6 Inspect, test, and repair or replace heater valve and controls*
8.0.7.7 Diagnose and repair air distribution system problems*
8.0.7.8 Inspect, test, and repair or replace electric and vacuum motors, solenoids, and switches*

COMPETENCY 8.0.8: Use alternative refrigerants*

COMPETENCY BUILDERS:

8.0.8.1 Refer to shop manual for proper use and storage procedures*
8.0.8.2 Handle and dispose of alternate refrigerants according to EPA guidelines*
8.0.8.3 Practice safety procedures when handling refrigerants*

COMPETENCY 8.0.9: Use alternative cooling AC systems*

COMPETENCY BUILDERS:

8.0.9.1 Refer to shop manual for proper procedures*
8.0.9.2 Practice safety procedures when troubleshooting AC systems*

* Advancing
** Futuring

UNIT 9: Engine Performance

COMPETENCY 9.0.1: Evaluate overall engine performance

COMPETENCY BUILDERS:

9.0.1.1 Refer to shop manual for proper procedure*
9.0.1.2 Interpret complaint
9.0.1.3 Verify customer complaint
9.0.1.4 Road test vehicle and determine needed repairs
9.0.1.5 Inspect engine assembly for fuel, oil, coolant, and other leaks and determine needed repairs
9.0.1.6 Diagnose unusual exhaust color, odor, and sound and determine needed repairs
9.0.1.7 Perform engine vacuum tests and determine needed repairs
9.0.1.8 Perform cylinder power balance test and determine needed repairs
9.0.1.9 Perform cylinder compression test and determine needed repairs
9.0.1.10 Perform cylinder leakage test and determine needed repairs
9.0.1.11 Diagnose mechanical, ignition, or fuel problems using oscilloscope and/or engine analyzer and determine needed repairs
9.0.1.12 Inspect and calibrate infrared analyzer
9.0.1.13 Inspect vehicle exhaust system
9.0.1.14 Obtain exhaust emissions readings
9.0.1.15 Diagnose mechanical, ignition, or fuel or emissions-control problems using infrared exhaust analyzer and determine needed repairs
9.0.1.16 Perform analytic and diagnostic procedures on vehicle with on-board or self-diagnostic computer systems and determine needed repairs
9.0.1.17 Inspect, test, and adjust or replace sensor and actuator components and circuits of electronic engine management systems

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COMPETENCY 9.0.2: Troubleshoot and repair ignition system

COMPETENCY BUILDERS:

9.0.2.1 Refer to shop manual for proper procedure*
9.0.2.2 Diagnose no-starting, hard starting, engine misfire, poor driveability, abnormal combustion, power loss, and poor mileage on vehicle with electronic ignition systems and determine needed repairs
9.0.2.3 Inspect, test, and repair or replace ignition primary circuit wiring and components
9.0.2.4 Remove, inspect, test, repair, and reinstall distributor
9.0.2.5 Inspect, test, and repair or replace ignition system, secondary circuit wiring, and components
9.0.2.6 Inspect, test, and replace ignition coil
9.0.2.7 Check and adjust ignition system timing and verify timing advance
9.0.2.8 Inspect, test, and replace electronic ignition wiring harness and connectors
9.0.2.9 Inspect, test, and replace electronic ignition system, pick-up sensor, and trigger devices
9.0.2.10 Inspect, test, and replace electronic ignition system control unit (module)
9.0.2.11 Diagnose problems in distributorless ignition system (DIS) and determine needed repairs
9.0.2.12 Diagnose problems in glow plug system and determine needed repairs

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COMPETENCY 9.0.3: Troubleshoot and repair fuel and exhaust systems

COMPETENCY BUILDERS:

9.0.3.1 Refer to shop manual for proper procedure
9.0.3.2 Diagnose no-starting, hard starting, poor idle, flooding, hesitation, surging, engine misfire, power loss, poor mileage, and dieseling problems on vehicle with carburetor-type fuel systems and determine needed repairs
9.0.3.3 Diagnose no-starting, hard starting, poor idle, flooding, hesitation, surging, engine misfire, power loss, poor mileage, and dieseling problems on vehicle with injection-type fuel systems and determine needed repairs
9.0.3.4 Inspect fuel tank, fuel tank filter, and fuel cap
9.0.3.5 Inspect and replace fuel lines and hoses
9.0.3.6 Check fuel for contaminants
9.0.3.7 Inspect, test (pressure, vacuum, and volume), and replace fuel pumps and pump controls
9.0.3.8 Inspect, service, and replace fuel filters
9.0.3.9 Inspect, clean, adjust, test, and repair or replace cold-enrichment systems
9.0.3.10 Remove and replace carburetor/fuel injection throttle body and adjust related linkages
9.0.3.11 Rebuild carburetor
9.0.3.12 Inspect, clean, and repair or replace carburetor mounting plates, fuel-injection air induction system, intake manifold, and gaskets
9.0.3.13 Adjust carburetor idle speed and fuel mixture
9.0.3.14 Adjust carburetor/fuel-injection idle speed and fuel mixture on closed-loop fuel control systems
9.0.3.15 Inspect, test, clean, and adjust or replace components of carburetor/fuel-injection closed-loop fuel control systems
9.0.3.16 Inspect and service air cleaner and element
9.0.3.17 Remove and replace fuel injectors
9.0.3.18 Perform fuel injector tests (i.e., resistance, spray pattern, and pressure drop)
9.0.3.19 Clean fuel-injection system on vehicle according to manufacturer's recommendations
9.0.3.20 Test turbocharger or supercharger system and determine needed repairs
9.0.3.21 Remove, clean, inspect, and repair or replace turbocharger or supercharger system components
9.0.3.22 Diagnose turbocharger or supercharger malfunctions
9.0.3.23 Remove and replace fuel tank
9.0.3.24 Remove and replace fuel gauge sending unit

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9.0.3.25 Remove and replace diesel injectors, lines, and pump
9.0.3.26 Bleed and time fuel system
9.0.3.27 Test diesel-injector spray pattern
9.0.3.28 Service diesel fuel filters
9.0.3.29 Test oxygen (O2) sensor
9.0.3.30 Remove and replace or reinstall oxygen (O2) sensor
9.0.3.31 Inspect, service, and replace or reinstall exhaust manifold, exhaust pipes, mufflers, resonators, tail pipes, and heat shields

COMPETENCY 9.0.4: Troubleshoot and repair positive crankcase ventilation (PCV) system*

COMPETENCY BUILDERS:

9.0.4.1 Refer to shop manual for proper procedure*
9.0.4.2 Test PCV system and determine needed repairs*
9.0.4.3 Inspect, test, and repair or replace PCV valve, filter, tubes, and hoses*
9.0.4.4 Inspect and verify proper PCV application*

COMPETENCY 9.0.5: Troubleshoot and repair spark-timing control system*

COMPETENCY BUILDERS:

9.0.5.1 Refer to shop manual for proper procedure*
9.0.5.2 Test spark-timing control system and determine needed repairs*
9.0.5.3 Inspect, test, and repair or replace electrical/electronic components and circuits of spark-timing control system*
9.0.5.4 Inspect, test, and repair or replace thermal, mechanical, or vacuum components and hoses of spark-timing control system*

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COMPETENCY 9.0.6: Troubleshoot and repair idle-speed control system*

COMPETENCY BUILDERS:

9.0.6.1 Refer to shop manual for proper procedure*
9.0.6.2 Test idle-speed control system and determine needed repairs*
9.0.6.3 Inspect, test, and adjust or replace sensors, solenoids, vacuum valves, motors, switches, circuits, and hoses of idle-speed control system*
9.0.6.4 Test deceleration control system and determine needed repairs*
9.0.6.5 Inspect, test, and adjust or replace electrical components, circuits, vacuum components, and hoses of deceleration control system*

COMPETENCY 9.0.7: Troubleshoot and repair exhaust gas recirculation (EGR) system*

COMPETENCY BUILDERS:

9.0.7.1 Refer to shop manual for proper procedure*
9.0.7.2 Test EGR system and determine needed repairs*
9.0.7.3 Inspect, test, and repair or replace valve, valve manifold, and exhaust passages of EGR system*
9.0.7.4 Inspect, test, and repair or replace vacuum/pressure controls, filter, and hoses of EGR system*
9.0.7.5 Inspect, test, and repair or replace electrical/electronic controls and wiring of EGR system*

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COMPETENCY 9.0.8: Troubleshoot and repair exhaust gas treatment/air injection reaction (AIR) and catalytic converter*

COMPETENCY BUILDERS:

9.0.8.1 Refer to shop manual for proper procedure*
9.0.8.2 Test pump-type air injection system and determine needed repairs*
9.0.8.3 Inspect, test, and repair or replace pump, pressure relief valve, filter, pulley, and belt of pump-type air injection system*
9.0.8.4 Inspect, test, and repair or replace vacuum-operated air control valves and vacuum hoses of pump-type air injection system*
9.0.8.5 Inspect and repair or replace electrically/electronically-operated air control valves and circuits of pump-type air injection system*
9.0.8.6 Inspect and repair or replace hoses, check valves, air manifolds, and nozzles of pump-type air injection system*
9.0.8.7 Test exhaust pulse-type air injection system and determine needed repairs*
9.0.8.8 Inspect, test, and repair or replace pulse air valve(s) and hoses of exhaust pulse-type air injection system*
9.0.8.9 Inspect, test, and repair or replace converter catalyst or converter(s) according to EPA requirements*
9.0.8.10 Inspect and repair or replace heat shield(s)*

COMPETENCY 9.0.9: Troubleshoot and repair inlet air-temperature control system*

COMPETENCY BUILDERS:

9.0.9.1 Refer to shop manual for proper procedure*
9.0.9.2 Test inlet air-temperature control system and determine needed repairs*
9.0.9.3 Inspect, test, and repair or replace sensors, diaphragm, and hoses of inlet air-temperature control system*
9.0.9.4 Inspect, test, and repair or replace heat stove shroud, hot air pipe, and damper of inlet air-temperature control system*

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COMPETENCY 9.0.10: Troubleshoot and repair intake manifold heat control system*

COMPETENCY BUILDERS:

9.0.10.1 Refer to shop manual for proper procedure*
9.0.10.2 Inspect and repair or replace manifold heat control (heat riser) valve(s)*
9.0.10.3 Test electrical, vacuum, and coolant-type manifold heat control systems and determine needed repairs*
9.0.10.4 Inspect, test, and repair or replace components of electrical, vacuum, and coolant-type manifold heat control systems*

COMPETENCY 9.0.11: Troubleshoot and repair fuel vapor control system*

COMPETENCY BUILDERS:

9.0.11.1 Refer to shop manual for proper procedure*
9.0.11.2 Test fuel vapor control system and determine needed repairs*
9.0.11.3 Inspect and replace fuel tank cap, liquid/vapor separator, liquid check valve, lines, and hoses of fuel vapor control system*
9.0.11.4 Inspect and repair or replace canister, purge lines, and filter of fuel vapor control system*
9.0.11.5 Inspect, test, and replace thermal, vacuum, and electrical controls of fuel vapor control system*

COMPETENCY 9.0.12: Perform engine-related service

COMPETENCY BUILDERS:

9.0.12.1 Refer to shop manual for proper procedure*
9.0.12.2 Adjust valves on engines with mechanical or hydraulic lifters
9.0.12.3 Verify correct valve timing and determine needed repairs
9.0.12.4 Verify engine operation temperature and determine needed repairs
9.0.12.5 Perform cooling system pressure test and determine needed repairs
9.0.12.6 Check coolant
9.0.12.7 Inspect and test radiator, pressure cap, and coolant recovery tank hoses and determine needed repairs
9.0.12.8 Inspect and replace thermostat, bypass, and housing
9.0.12.9 Inspect, test, and replace mechanical and electrical fans, fan clutch, fan shroud/ducting, and fan control devices

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** Futuring

UNIT 10: Nonmechanical Body Trim and Upholstery

COMPETENCY 10.0.1: Remove and install hard and soft body trims

COMPETENCY BUILDERS:

10.0.1.1 Refer to shop manual for proper procedure*
10.0.1.2 Remove and install interior and exterior moldings
10.0.1.3 Remove and install interior soft trim

COMPETENCY 10.0.2: Repair body leaks and repairs

COMPETENCY BUILDERS:

10.0.2.1 Refer to shop manual for proper procedure*
10.0.2.2 Locate and diagnose leaks
10.0.2.3 Repair leaks

UNIT 11: Employability Skills

SUBUNIT 11.1: Career Development

COMPETENCY 11.1.1: Investigate career options

COMPETENCY BUILDERS:

11.1.1.1 Determine interests and aptitudes
11.1.1.2 Identify career options
11.1.1.3 Research occupations matching interests and aptitudes
11.1.1.4 Select career(s) that best match(es) interests and aptitudes
11.1.1.5 Identify advantages and disadvantages of career options, including nontraditional careers
11.1.1.6 Assess differences in wages, annual incomes, and job opportunities based on geographic location
11.1.1.7 Develop a career plan

COMPETENCY 11.1.2: Analyze potential barriers to employment

COMPETENCY BUILDERS:

11.1.2.1 Identify common barriers to employment
11.1.2.2 Develop strategies to overcome employment barriers

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UNIT 11: Employability Skills

SUBUNIT 11.2: Decision Making and Problem Solving

COMPETENCY 11.2.1: Apply decision-making techniques in the workplace

COMPETENCY BUILDERS:

11.2.1.1 Identify the decision to be made
11.2.1.2 Compare alternatives
11.2.1.3 Determine consequences of each alternative
11.2.1.4 Make decisions based on values and goals
11.2.1.5 Evaluate the decision made

COMPETENCY 11.2.2: Apply problem-solving techniques in the workplace

COMPETENCY BUILDERS:

11.2.2.1 Diagnose the problem and its causes
11.2.2.2 Identify alternatives and their consequences in relation to the problem
11.2.2.3 Examine multicultural and nonsexist dimensions of problem solving
11.2.2.4 Utilize resources to explore possible solutions to the problem
11.2.2.5 Compare and contrast the advantages and disadvantages of each solution
11.2.2.6 Determine appropriate action
11.2.2.7 Evaluate results

UNIT 11: Employability Skills

SUBUNIT 11.3: Work Ethic

COMPETENCY 11.3.1: Evaluate the relationship of self-esteem to work ethic

COMPETENCY BUILDERS:

11.3.1.1 Identify special characteristics and abilities in self and others
11.3.1.2 Identify internal and external factors that affect self-esteem

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COMPETENCY 11.3.2: Analyze the relationship of personal values and goals to work ethic both in and out of the workplace

COMPETENCY BUILDERS:

11.3.2.1 Distinguish between values and goals
11.3.2.2 Determine the importance of values and goals
11.3.2.3 Evaluate how values affect goals
11.3.2.4 Identify short-term and long-term goals
11.3.2.5 Prioritize personal goals
11.3.2.6 Describe how personal values are reflected in work ethic
11.3.2.7 Describe how interactions in the workplace affect personal work ethic
11.3.2.8 Examine how life changes affect personal work ethic

COMPETENCY 11.3.3: Demonstrate work ethic

COMPETENCY BUILDERS:

11.3.3.1 Examine factors that influence work ethic
11.3.3.2 Exhibit characteristics that reflect an appropriate work ethic

UNIT 11: Employability Skills

SUBUNIT 11.4: Job-Seeking Skills

COMPETENCY 11.4.1: Prepare for employment

COMPETENCY BUILDERS:

11.4.1.1 Identify traditional and nontraditional employment sources
11.4.1.2 Utilize employment sources
11.4.1.3 Research job opportunities, including nontraditional careers
11.4.1.4 Interpret equal employment opportunity laws
11.4.1.5 Explain the critical importance of personal appearance, hygiene, and demeanor throughout the employment process
11.4.1.6 Prepare for generic employment tests and those specific to an occupation/organization

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COMPETENCY 11.4.2: Design a résumé

COMPETENCY BUILDERS:

11.4.2.1 Identify personal strengths and weaknesses
11.4.2.2 List skills and/or abilities, career objective(s), accomplishments/achievements, educational background, and work experience
11.4.2.3 Demonstrate legible written communication skills using correct grammar, spelling, and concise wording
11.4.2.4 Complete résumé using various formats
11.4.2.5 Secure references

COMPETENCY 11.4.3: Complete and process job application forms

COMPETENCY BUILDERS:

11.4.3.1 Explain the importance of an application form
11.4.3.2 Identify ways to obtain job application forms
11.4.3.3 Describe methods for handling illegal questions on job application forms
11.4.3.4 Demonstrate legible written communications skills using correct grammar, spelling, and concise wording
11.4.3.5 Return application to proper person, request interview, and follow up

COMPETENCY 11.4.4: Demonstrate interviewing skills

COMPETENCY BUILDERS

11.4.4.1 Investigate interview environment and procedures
11.4.4.2 Explain the critical importance of personal appearance, hygiene, and demeanor
11.4.4.3 Demonstrate question and answer techniques
11.4.4.4 Demonstrate methods for handling difficult and/or illegal interview questions

COMPETENCY 11.4.5: Secure employment

COMPETENCY BUILDERS:

11.4.5.1 Identify present and future employment opportunities within an occupation/organization
11.4.5.2 Research the organization/company
11.4.5.3 Use follow-up techniques to enhance employment potential
11.4.5.4 Compare and evaluate job offers

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UNIT 11: Employability Skills

SUBUNIT 11.5: Job Retention Skills

COMPETENCY 11.5.1: Analyze the organizational structure of the workplace

COMPETENCY BUILDERS:

11.5.1.1 Identify and evaluate employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene
11.5.1.2 Be aware of and obey all company policies and procedures
11.5.1.3 Examine the role/relationship between employee and employer
11.5.1.4 Recognize opportunities for advancement and reasons for termination

COMPETENCY 11.5.2: Maintain positive relations with others

COMPETENCY BUILDERS:

11.5.2.1 Exhibit appropriate work habits and attitude
11.5.2.2 Identify behaviors to establish successful working relationships
11.5.2.3 Cooperate and compromise through teamwork and group participation
11.5.2.4 Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age

UNIT 11: Employability Skills

SUBUNIT 11.6: Job Advancement

COMPETENCY 11.6.1: Analyze opportunities for personal and career growth

COMPETENCY BUILDERS:

11.6.1.1 Determine opportunities within an occupation/organization
11.6.1.2 Compare and contrast other opportunities
11.6.1.3 List benefits of job advancement
11.6.1.4 Evaluate factors involved when assuming a new position within or outside an occupation/organization

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COMPETENCY 11.6.2: Exhibit characteristics needed for advancement

COMPETENCY BUILDERS:

11.6.2.1 Display a positive attitude
11.6.2.2 Demonstrate knowledge of a position
11.6.2.3 Perform quality work
11.6.2.4 Adapt to changing situations and technology
11.6.2.5 Demonstrate capability for different positions
11.6.2.6 Participate in continuing education/training programs
11.6.2.7 Respect, accept, and work with ALL individuals in the workplace

UNIT 11: Employability Skills

SUBUNIT 11.7: Technology in the Workplace

COMPETENCY 11.7.1: Assess the impact of technology in the workplace

COMPETENCY BUILDERS:

11.7.1.1 Cite how past business/industry practices have influenced present business/industry processes
11.7.1.2 Investigate the use of technology in the workplace
11.7.1.3 Analyze how present skills can be applied to learning new technologies

COMPETENCY 11.7.2: Use a variety of technological applications

COMPETENCY BUILDERS:

11.7.2.1 Explore basic mathematical, scientific, computer, and technological principles
11.7.2.2 Use technology to accomplish assigned tasks
11.7.2.3 Create solutions to problems using technical means

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UNIT 11: Employability Skills

SUBUNIT 11.8: Lifelong Learning

COMPETENCY 11.8.1: Apply lifelong learning to individual situations

COMPETENCY BUILDERS:

11.8.1.1 Define lifelong learning
11.8.1.2 Identify factors that cause the need for lifelong learning

COMPETENCY 11.8.2: Adapt to change

COMPETENCY BUILDERS:

11.8.2.1 Analyze the effects of change
11.8.2.2 Identify reasons why goals change
11.8.2.3 Describe the importance of flexibility when reevaluating goals
11.8.2.4 Evaluate the need for continuing education/training

UNIT 11: Employability Skills

SUBUNIT 11.9: Economic Education

COMPETENCY 11.9.1: Analyze global enterprise systems

COMPETENCY BUILDERS:

11.9.1.1 Identify characteristics of various enterprise systems
11.9.1.2 Examine the relationship between competition, risk, and profit
11.9.1.3 Illustrate how supply and demand influence price

COMPETENCY 11.9.2: Evaluate personal money management

COMPETENCY BUILDERS:

11.9.2.1 Describe the need for personal management records
11.9.2.2 Identify methods of taxation
11.9.2.3 Analyze how credit affects financial security
11.9.2.4 Compare types and methods of investments
11.9.2.5 Prepare a personal budget
11.9.2.6 Be an informed and responsible consumer
11.9.2.7 Analyze the effects of advertising on the consumer

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UNIT 11: Employability Skills

SUBUNIT 11.10: Balancing Work and Family

COMPETENCY 11.10.1: Analyze the effects of family on work

COMPETENCY BUILDERS:

11.10.1.1 Recognize how family values, goals, and priorities are reflected in the workplace
11.10.1.2 Identify present and future family structures and responsibilities
11.10.1.3 Describe personal and family roles
11.10.1.4 Analyze concerns of working parent(s)
11.10.1.5 Examine how family responsibilities can conflict with work
11.10.1.6 Resolve family-related conflicts
11.10.1.7 Explain how to use support systems/community resources to help resolve family-related conflicts

COMPETENCY 11.10.2: Analyze the effects of work on family

COMPETENCY BUILDERS:

11.10.2.1 Identify responsibilities associated with paid and nonpaid work
11.10.2.2 Compare the advantages and disadvantages of multiple incomes
11.10.2.3 Examine how work can conflict with family responsibilities
11.10.2.4 Describe how work-related stress can affect families
11.10.2.5 Identify family support systems and resources

UNIT 11: Employability Skills

SUBUNIT 11.11: Citizenship in the Workplace

COMPETENCY 11.11.1: Exercise the rights and responsibilities of citizenship in the workplace

COMPETENCY BUILDERS:

11.11.1.1 Identify the basic rights and responsibilities of citizenship
11.11.1.2 Examine the history and contributions of all racial, ethnic, and cultural groups

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COMPETENCY 11.11.2: Cooperate with others in the workplace

COMPETENCY BUILDERS:

11.11.2.1 Identify situations in which compromise is necessary
11.11.2.2 Examine how individuals from various backgrounds contribute to work-related situations
11.11.2.3 Demonstrate initiative to facilitate cooperation
11.11.2.4 Give and receive constructive criticism to enhance cooperation

UNIT 11: Employability Skills

SUBUNIT 11.12: Leadership

COMPETENCY 11.12.1: Evaluate leadership styles appropriate for the workplace

COMPETENCY BUILDERS:

11.12.1.1 Identify characteristics of effective leaders
11.12.1.2 Compare leadership styles
11.12.1.3 Demonstrate effective delegation skills
11.12.1.4 Identify opportunities to lead in the workplace

COMPETENCY 11.12.2: Demonstrate effective teamwork skills

COMPETENCY BUILDERS:

11.12.2.1 Identify the responsibilities of a valuable group member
11.12.2.2 Exhibit open-mindedness
11.12.2.3 Identify methods of involving each member of a team
11.12.2.4 Contribute to the efficiency and success of a group
11.12.2.5 Determine ways to motivate others

COMPETENCY 11.12.3: Utilize effective communication skills

COMPETENCY BUILDERS:

11.12.3.1 Demonstrate the importance of listening
11.12.3.2 Demonstrate assertive communication
11.12.3.3 Recognize the importance of verbal and nonverbal cues and messages
11.12.3.4 Analyze written material
11.12.3.5 Prepare written material
11.12.3.6 Give and receive feedback
11.12.3.7 Articulate thoughts
11.12.3.8 Use appropriate language

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UNIT 11: Employability Skills

SUBUNIT 11.13: Entrepreneurship

COMPETENCY 11.13.1: Evaluate the role of small business in the economy

COMPETENCY BUILDERS:

11.13.1.1 Identify the benefits of small business to a community
11.13.1.2 Analyze opportunities for small business in a community

COMPETENCY 11.13.2: Examine considerations of starting a business

COMPETENCY BUILDERS:

11.13.2.1 Research a business idea
11.13.2.2 Compare various ways to become a small business owner
11.13.2.3 Investigate factors to consider in financing a new business
11.13.2.4 Evaluate entrepreneurship as a career option

* Advancing
** Futuring

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